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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
BOCHNA, DAVID				
ART UNIT		PAPER NUMBER		
3679				
NOTIFICATION DATE		DELIVERY MODE		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

## Application No.

10/594,112

## Applicant(s)

ROUSSIE ET AL.

## Examiner

David E. Bochna

## Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 35-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 35-68 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/55/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 35-68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Regarding claim 35, the phrase "so as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).
4. Claim 35 recites the limitation "the undulation profile" in the second to last line. There is insufficient antecedent basis for this limitation in the claim.
5. Claim 35 recites the limitation "the profile" in the last line. There is insufficient antecedent basis for this limitation in the claim.
6. Regarding claim 37, it is unclear what is being claimed. The language of claim 37 should be written to clarify the claim limitations. The phrase "is less than 1" is also unclear.
7. Claims 43 and 44, it is unclear what is meant by "periodic profile".
8. Claim 45 recites the limitation "the profile" in line 1. There is insufficient antecedent basis for this limitation in the claim.
9. Claim 62, lines 2-3, it is unclear what is meant by the phrase "and either side thereof".
10. Claim 64, lines 2-3, it is unclear what "plane" is being referred to in the phrase "the plane of the minimum diameter", is it the plane along the external surface of the female member at the minimum external point?
11. Claim 64 recites the limitation "the plane of the minimum diameter" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 64 recites the limitation "the regular portion " in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

13. Claims 67-68 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps. See MPEP § 2172.01.. Claims 67-68 are drawn to "a process", however no process or method steps are actually recited in the claims.

***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claim 35, 37-40, 43-44, 51, 53-55 and 67-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Krug et al. '102.

In regard to claim 35 (New): A threaded tubular connection for a tubular string that is subjected to dynamic bending loads, comprising:

a male tubular element 2 including a male threaded portion 11 and a female tubular element 1 including a female threaded portion 5, at least one transfer zone 26 axially disposed between the threaded portions and a free end 10 of one of the tubular elements, while being axially spaced from the threaded portions so as to transfer a fraction of at least 20% of bending moment to which the connection is subjected from one element to the other,

the male and female elements including respective transfer surfaces 13, 14, 15 in mutual contact with a radial interference fit in the transfer zone, at least one of the transfer surfaces being an undulated surface 13, 14 defining a series of annular rounded ribs that come into

interfering contact with the facing transfer surface 15, points of maximum diameter and minimum diameter of the undulation profile being located on respective rounded portions 13, 14 of the profile.

In regard to claim 37, in which axial length of the transfer zone 26 limits contact pressure resulting from transferring the bending moment to a fraction of the yield strength of the material which is less than 1.

In regard to claim 38, in which the male and female transfer surfaces are lubricated (see col. 3, lines 50-54).

In regard to claim 39, in which the facing transfer surface 15 is a smooth surface.

In regard to claim 40, in which the undulated surface 13, 14 is out of contact with the smooth surface 15 between the ribs 13, 14.

In regard to claim 43, in which the undulated surface 13, 14 has a periodic profile (only length of 26).

In regard to claim 44, in which the periodic profile 26 is asymmetric (the tapered surface makes length 26 asymmetric).

In regard to claim 51, in which the radial interference fit is substantially constant from one rib to the other (the surfaces 13 and 14 and 15 have the same tapered angle).

In regard to claim 53, in which the transfer surfaces are in mutual metal/metal sealing contact (see col. 6, lines 10-12).

In regard to claim 54, in which a sealing material in a form of a coating (the grease referred to in col. 3, lines 50-54) is interposed between the metal surfaces of the male and female elements in the transfer zone.

In regard to claim 55, in which the male and female transfer surfaces or their envelopes form part of tapered surfaces.

In regard to claim 67, Krug et al. discloses a process for improving resistance to fatigue of a threaded tubular connection subjected to dynamic bending loads, the connection including a male tubular element 2 with a male threaded portion 11 and a female tubular element 1 with a female threaded portion 5, wherein the connection includes at least a transfer zone 26 axially located between the threaded portions and the free end of one of the tubular elements while being axially spaced from the threaded portions so as to transfer from one element to the other element a fraction at least equal to 20% of the bending moment undergone by the connection, the male and female elements having in the transfer zone 26 respective transfer surfaces that are in mutual contact and interfere radially, one at least of the transfer surfaces comprising means 13, 14 for radially spacing the contact locations of the section where the stresses applied to the connection run.

In regard to claim 68, in which the means are in a form of a series of rounded annular ribs 13, 14.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 45-46, 49-50, 52 and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krug et al.

Regarding claims 45-46, Krug et al. discloses a first convex portion rounded portion 13 containing a point with a maximum profile diameter (at 13), a second concave rounded portion containing a point with a minimum profile diameter (low point of concavity between 13 and 14) and a third convex portion 14 with a larger radius. Krug et al. discloses the undulated surface on the female member and the smooth surface on the male member, instead of the opposite as recited by the Applicant. However, it would have been obvious to one of ordinary skill in the to place the undulated surface on the male member and the smooth surface on the female member because the reversal of components in a prior art reference, where there is no disclosed significance to such reversal, is a design consideration within the skill of the art. In re Gazda, 219 F.2d 449, 104 USPQ 400 (CCPA 1955); In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Regarding claims 49-50 and 52, Krug et al. discloses rounded portions as recited by the Applicant, but does not disclose the exact radii or distance between the rounded portions. However, it would have been obvious to one of ordinary skill in the art to make the dimensions of the rounded surfaces as that recited by the Applicant because a change in the size of a prior art device is a design consideration within the skill of the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955).

Regarding claims 56-57, Krug et al. discloses a tapered undulated surface as described above, but does not disclose the exact angle or roughness of the tapered surface. However, it would have been obvious to one of ordinary skill in the art to make the angle and surface roughness of the rounded surfaces 13, 14 as that recited by the Applicant because a change in the



shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

18. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krug et al. in view of Dutilleul et al. '821. Krug et al. discloses a female element 1 with female threads at only one end of the element, but not a sleeve with female threads at both ends. Dutilleul et al. teaches that it is common and well known in the art to provide a female box element with female threads either at one end (fig. 3) or at both ends (fig. 2). Therefore it would have been obvious to one of ordinary skill in the art to modify the female element 1 of Krug to include female threads at both ends because inasmuch as the references disclose these elements as art recognized equivalents, it would have been obvious to one of ordinary skill in the exercise art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982).

#### ***Allowable Subject Matter***

19. Claims 36, 41-42, 47-48 and 58-65 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carcagno et al., Dell'Erba et al., Maeda, Verdillon, Noel, Galle et al., Reimert et al., Sinclair, Tai and Liggins et al. all disclose similar couplings common in the art.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Bochna whose telephone number is (571) 272-7078. The examiner can normally be reached on 8-5:30 Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David E. Bochna/  
Primary Examiner, Art Unit 3679